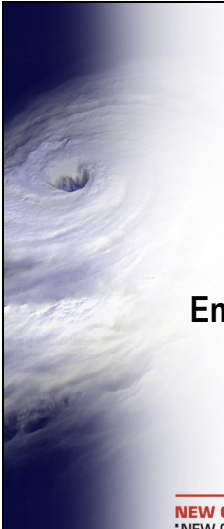


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INFORMATIONAL SESSION

Tom Harris
LDEQ M.S.P.H.
Environmental Technology Division


**Overview of Environmental Sampling
Post Hurricane Katrina**

NEW ORLEANS AREA ENVIRONMENTAL REVIEW AND SUMMARY
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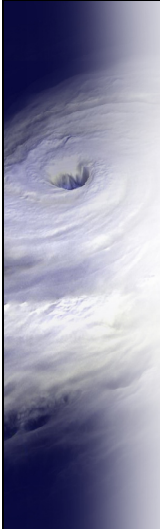
SEARCH AND RESCUE



- Teaming with the Louisiana Sheriffs' Association, LDEQ employees aided in the rescue of approximately 480 people from the hurricane affected area.


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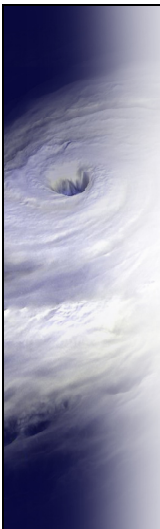
ENVIRONMENTAL SAMPLING AND ASSESSMENT

Water Sampling–New Orleans Area



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FLOODWATER SAMPLING

New Orleans Area Sampling

- 690 floodwater samples taken
- 192 compounds analyzed per each sample
- Volatile and semi-volatile organics, metals, pesticides, herbicides, PCBs & petroleum hydrocarbons
- Floodwater sample results were compared to Lifetime Drinking Water Standards!!!

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ENVIRONMENTAL SAMPLING AND ASSESSMENT

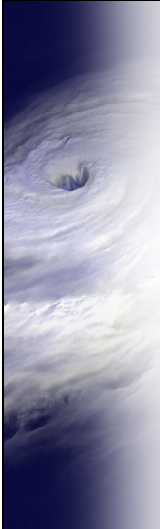
New Orleans Floodwaters–Toxic Soup?



- There was never any “toxic soup” in the floodwaters of New Orleans

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HISTORIC STORMWATER DISCHARGE VERSUS FLOODWATER DISCHARGE

Concentration Levels in Floodwaters


- Post-Katrina floodwaters were pumped into canals and then discharged to Lake Pontchartrain
- These floodwater discharge concentrations were compared to historical permitted discharge monitoring reports for stormwater
- Comparison of maximum detected results revealed very little difference between historical norms and post-Katrina levels

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ENVIRONMENTAL SAMPLING AND ASSESSMENT

Surface Waters—Lake Pontchartrain and Surrounding Waters




- Used 49 historic water quality sites plus 9 new sites to assess impacts to area water bodies
- Conducted more than 68,000 analyses for water quality
- Conducted biotoxicity testing on floodwaters pumped into the lake

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ENVIRONMENTAL SAMPLING AND ASSESSMENT:

Surface Waters-Lake Pontchartrain



Total estimated volume pumped from New Orleans to Lake Pontchartrain was 8.86 billion cubic feet or 4.5% of the volume of Lake Pontchartrain.

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ENVIRONMENTAL SAMPLING AND ASSESSMENT:

Surface Waters-Lake Pontchartrain



- Lake Pontchartrain remains normal and, evidently, has been unaffected by the pumping of floodwaters from New Orleans
- Live shrimp & crabs were found in traps on the Southshore immediately following Katrina
- Field observations have reported large schools of fish striking at bait
- Large shrimp catches were reported in December
- Recreational fishing has been good as reported in local newspapers

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ENVIRONMENTAL SAMPLING AND ASSESSMENT:

Surface Waters-Coastal Louisiana (Including Seafood)



- Environmental sampling and assessment was done across coastal Louisiana.

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ENVIRONMENTAL SAMPLING AND ASSESSMENT:

Surface Waters-Coastal Louisiana (Including Seafood)




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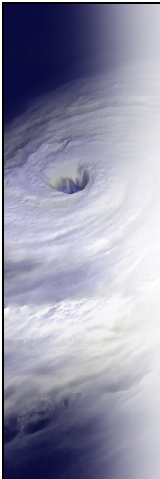
ENVIRONMENTAL SAMPLING AND ASSESSMENT:
Surface Waters-Coastal Louisiana (Including Seafood)

Fish Tissue Sampling


- Multi-agency effort among Louisiana, Mississippi and Alabama environmental and public health agencies, FDA, NOAA, and EPA
- Lake Pontchartrain to Mobile Bay
- Shrimp, crabs, oysters and finfish
- LDEQ and FDA sampled Lake Pontchartrain
- No fish advisories were needed

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ENVIRONMENTAL SAMPLING AND ASSESSMENT:
Sediments

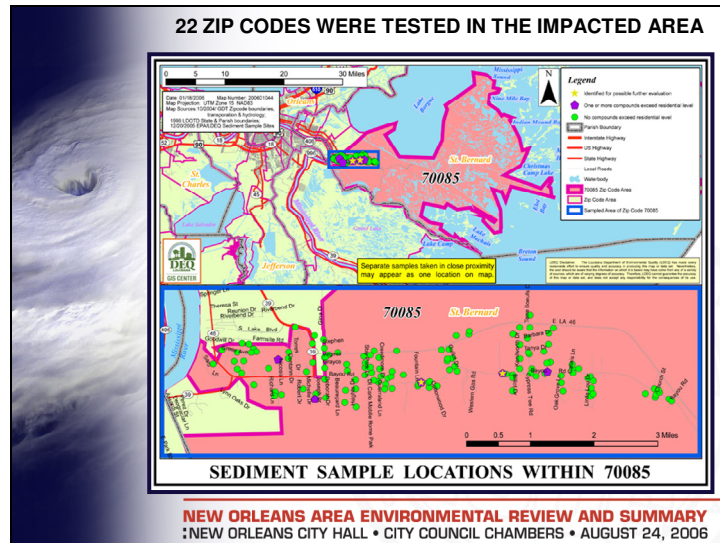


- Considerable sampling and analysis of sediments deposited throughout the flooded areas was done to address public health concerns



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ENVIRONMENTAL SAMPLING AND ASSESSMENT

Surface Waters–Canal Outfalls


- No toxicity was observed in 100 tests results of fish larvae
- 7 out of 100 test results for invertebrates indicated toxicity (3 canal sites)
- Retesting at the 3 canal sites has shown no further toxicity levels
- All other parameters at or near normal

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ENVIRONMENTAL SAMPLING AND ASSESSMENT

Sediments



- Considerable sampling and analysis of sediments deposited throughout the flooded areas was done to address public health concerns




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ENVIRONMENTAL SAMPLING AND ASSESSMENT

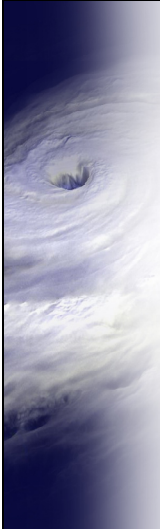
Sediment/Soil Sampling

- Joint effort among USEPA, LDEQ, CDC, ATSDR, LDHH and the New Orleans Health Department
- Over 1500 soil/sediment samples have been collected to date
- Samples analyzed for over 200 chemicals
- Tiered approach with multiple phases



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ENVIRONMENTAL SAMPLING AND ASSESSMENT

Phase I Sediment Sampling

- Sampling began as floodwaters receded
- 450 biased samples were collected to identify possible releases
- Samples were collected from sediments with stains or odors and from curbs/storm drains and drainage paths

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ENVIRONMENTAL SAMPLING AND ASSESSMENT

Sediment Sampling



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**ENVIRONMENTAL SAMPLING
AND ASSESSMENT**
Sediment Sampling



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**ENVIRONMENTAL SAMPLING
AND ASSESSMENT**
Sediment Sampling



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ENVIRONMENTAL SAMPLING AND ASSESSMENT

Sediment Sampling




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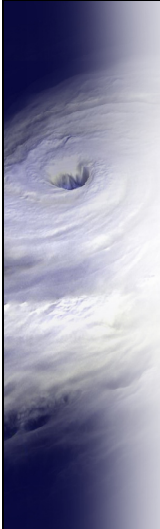
ENVIRONMENTAL SAMPLING AND ASSESSMENT

Sediment Sampling



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ENVIRONMENTAL SAMPLING AND ASSESSMENT

Phase II Sediment Sampling

- Objective - more extensively characterize chemical nature of sediment in areas with heavy deposits
- 9th Ward and St. Bernard Parish (excluding the area impacted by the Murphy Oil spill)
- 282 samples collected
- Compared to protective residential standards

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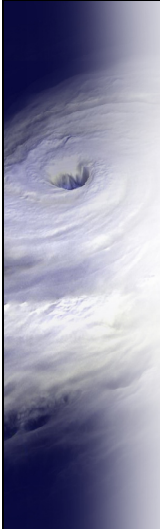
ENVIRONMENTAL SAMPLING AND ASSESSMENT

Sediment Sampling




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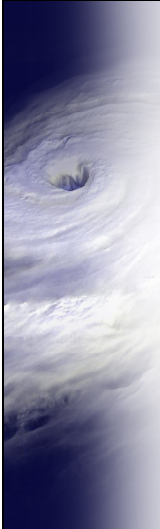
ENVIRONMENTAL SAMPLING AND ASSESSMENT

Sediment Sampling



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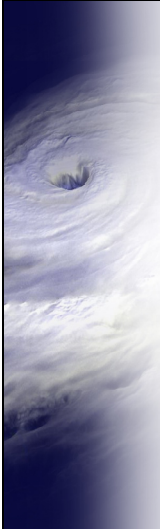
ENVIRONMENTAL SAMPLING AND ASSESSMENT

Phase III Sediment Sampling

- 43 sample locations out of 770 taken from earlier phases identified as localized areas that may require additional evaluation
- Arsenic, Lead or Benzo(a)pyrene
- The neighborhood around the Thompson-Hayward site was also identified for further evaluation

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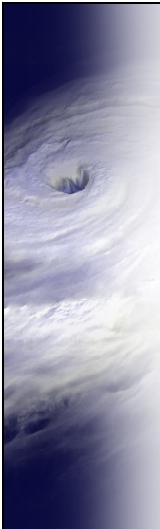
ENVIRONMENTAL SAMPLING AND ASSESSMENT

Phase III Focused Sampling

- To determine if elevated levels were isolated or representative of a larger area
- ~10 composite samples within a 500' radius of each of the 43 original sample locations
- Compared results to long-term Residential Standards (30 year, children)

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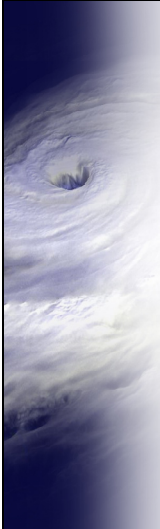
ENVIRONMENTAL SAMPLING AND ASSESSMENT

Sediment Sampling



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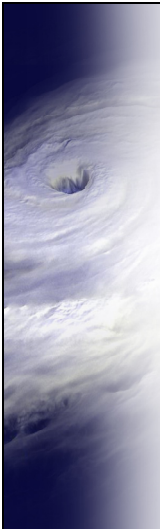
ENVIRONMENTAL SAMPLING AND ASSESSMENT

Phase III Findings–Arsenic

- No Phase III arsenic samples concentration were above residential levels
- Arsenic concentrations are not expected to cause health impacts to children or adults in a residential setting
- No follow-up is necessary for arsenic

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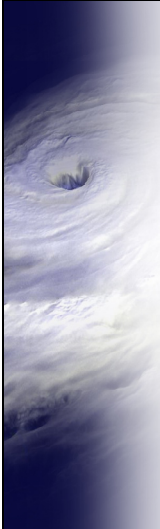
ENVIRONMENTAL SAMPLING AND ASSESSMENT

Phase III Findings–Benzo(a)pyrene

- One composite sample in the Agriculture Street landfill area exceeded EPA's acceptable risk range for B(a)P assuming long-term residential exposure.
- All other Phase III samples were below residential levels
- Not a widespread problem, limited to a small area – EPA is currently working with HANO to determine future property use.

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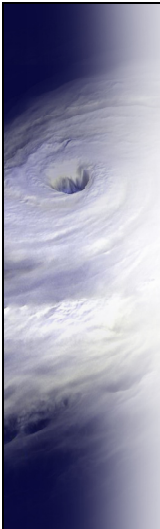
ENVIRONMENTAL SAMPLING AND ASSESSMENT

Phase III Findings—Thompson-Hayward

- 9 composite samples taken in the surrounding neighborhood
- Analyzed for complete spectrum of pesticides, no results exceeded residential levels
- Results indicated no adverse health effects for long-term residential exposure.

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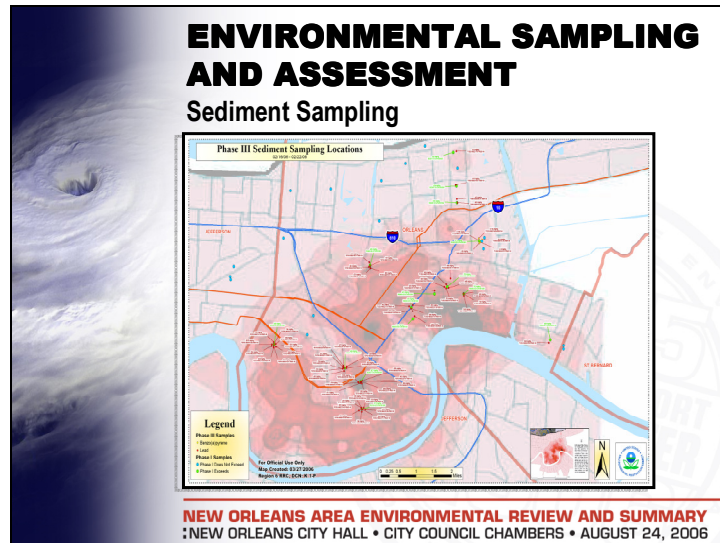
ENVIRONMENTAL SAMPLING AND ASSESSMENT

Phase III Findings—Lead

- Lead concentrations exceeded residential screening levels in 57 of 147 composite samples where lead had been detected in earlier samples
- Samples results ranged from below 400 mg/kg to 3960 mg/kg
- Results are consistent with historical levels in New Orleans, with national studies and are not hurricane related.
- Detailed chemical analysis determined the source of lead contamination in these areas to be lead based paint

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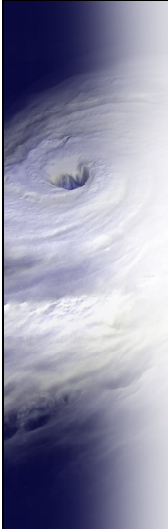
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ENVIRONMENTAL SAMPLING AND ASSESSMENT

Lead Issues

- Need to address the source of lead: housing stock built prior to 1978
- USEPA, LDEQ, LDHH and City Health Department are working together to address lead issues.

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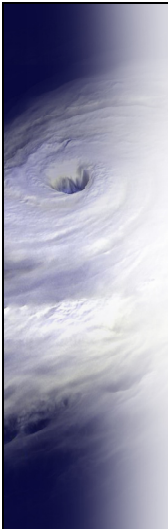


ENVIRONMENTAL SAMPLING AND ASSESSMENT

Phase IV Sediment Sampling

- Last phase of focused sampling:
 - February 2006 – June 2006
- Objective - more extensively characterize chemical nature of sediments. Over 700 samples collected. No human health issues discovered.
- Petroleum hydrocarbons are rapidly degrading, as expected

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ENVIRONMENTAL SAMPLING AND ASSESSMENT

Summary

- More than 1,800 New Orleans area sediment samples have been collected and analyzed for a wide variety of chemicals
- Soil chemistry post-Katrina is little changed from pre-Katrina conditions, and levels of contaminants are similar to other older urban centers around the country.
- Other than pre-existing lead in areas with older housing, soils in New Orleans do not pose health risk to residents, children or sensitive sub-populations.
- Scientists from USEPA, CDC, ATSDR, LDHH and LDEQ have worked together in this data assessment.

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